

REMARKS

The last Office Action of December 21, 2007 has been carefully considered. Reconsideration of the instant application in view of the foregoing amendments and the following remarks is respectfully requested.

Claims 1-11 are pending in the application. Claims 1, 5, 6, 10-11 have been amended. Claims 12-20 have been added. No claims have been canceled. Amendments to the specification have been made. No fee is due.

Claims 1-7, 11 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Pat. No. 6,745,090 to Malizia and U.S. Pat. No. 6,920,502 to Araujo et al., in view of U.S. Pat. No. 5,444,851 to Woest.

Claim 8 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Malizia and Araujo et al., in view of Helferich, and further in view of U.S. Pat. No. 7,085,841 to Edwards..

Claim 9 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Malizia and Araujo et al., in view of Helferich, and further in view of Edwards and U.S. Pat. No. 6,201,996 to Crater.

Claim 10 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Malizia and Araujo et al., in view of published U.S. Pat. Appl. No. 2003/0061274 to Lo.

Record is also made of a telephonic interview between applicant's representative and the Examiner which took place on April 28, 2008. The Examiner is thanked for his help and assistance as well as for the courtesies extended to Counsel at that time. Pursuant to that discussion, applicant's attorney has determined that DE198 48 618 A1 and DE 199 62 230 A1 have corresponding US patent specifications: 2002/0006790 A1 and 7,206,834 B1, respectively. Applicant is seeking translations of the German language references DE 100 06 062 A1; Hans B. Kief, NC/CNC Handbuch ["book" sic], 1995/96, Carl Hanser Verlag, Munich, Vienna, page 58; and Special Tooling 6/99, page 60 ff. "Hier spricht Ihre Steurung" (This Is Your Controller Speaking). The translations will be submitted as soon as available.

During the course of the interview, the present application was extensively discussed, and applicant's representative pointed out to the differences between the subject matter of the present invention and the prior art disclosures. More specifically, applicant noted that the invention is directed to solving the problem described in paragraphs [0006] to [0008] of the present application. The corresponding German patent application issued as German Patent DE 102 41 953 B4 on May 4, 2005.

In paragraphs [0006] to [0008] applicant's specification points out that the numerical controllers and other industrial control devices that provide convenient local access to the data needed for technicians' diagnostic work are well-known. However, as the use of industrial robots, automated machine tools and other automated processing equipment has increased, the demand for remote access to information about their operation and the importance of protecting that sensitive information from access by unauthorized third parties has also increased. These technicians need to be able to travel freely, but they also need immediate access to the sensitive event-specific information provided by such controllers when out-of-alarm conditions arise and the controllers cannot securely communicate that sensitive event-specific information to technicians by conventional means.

To assure prompt response by the technicians who are suitably qualified to diagnose and correct a particular out-of-limit condition -- where ever those technicians may be when it occurs -- it is obviously very advantageous to be able to use whatever conventional portable communications gear those technicians already carry, such as PDAs and cell phones, and any available notification means: voicemail, SMS and e-mail, as noted in paragraph [0013]. However, conventional means do not prevent outsiders from monitoring sensitive event-specific information and/or modifying the parameters used by an industrial process controller.

In paragraph [0007] the specification notes that conventional emails can be protected using the PKI (public key infrastructure). However, PKI keys must be periodically reinstalled and, since the particular keys needed to send and receive each PKI-encrypted email are designed to be resident on particular individual computers, the encrypted emails will be accessible to service technicians either in the

field or at their desks, not both. Thus PKI encryption cannot be used to securely provide diagnostic information to service technicians where ever they may be when an out-of-limit condition arises.

In accordance with the invention, a group of technicians who are suitably qualified to respond to a specified alarm is predefined for each specified alarm. When a specified alarm condition occurs, the disclosed embodiments of the invention provide an alarm message, preferably time-stamped, to one or more of these specified receivers. The disclosed embodiments also write event-relevant information to a database in a receiver-specific manner, preferably a receiver-specific database element. Event-relevant information is stored "receiver-specific" in a database element of the database 3 (paragraph [0024]), which provides a need-to-know basis for technicians' access to event-relevant information. This event-relevant information is also "designated for a specific receiver" when it is transmitted to the database 3 in paragraph [0024].

In response to that alarm message, the specified receiver establishes a protected communication protocol for obtaining the sensitive event-relevant information that was not provided in the receiver-specific alarm message. That protocol is then used, to obtain the sensitive event-relevant diagnostic information from the database where it was stored for that specified receiver, and can also be used for providing input to the controller.

Paragraph [0024] has been amended for internal consistency and clarity. In particular, "or recipient" has been deleted. This paragraph clearly points out that one member of the predefined group of receivers assigned by the alarm indicating system 2 to that specific event or alarm earlier in the paragraph, may be a "service technician." However, because the German text itself does not contain the words "or recipient" but just provides the service technicians as an example of a receiver, "receivers" is used throughout, for the sake of consistency. Paragraph [0028] was amended to correct an obvious typographical error that erroneously used the number 3 for the "alarm indicating system 2" and for the sake of clarity.

Claims 1 and 11 have been amended to more particularly point out and specifically claim the invention by reciting that the alarm message does not contain "sensitive event-relevant information" as disclosed in paragraph [0024]. Also, in the accessing step, the receiver accesses event-relevant information that was written to the database "for the specified receiver" as supported by [0028] which, in the specification as filed, clearly states that the sensitive event-relevant information is stored "recipient-specific" in a database element of the database.

Claim 10 has been amended for the sake of clarity so that the "accessing" step includes transmitting, rather than being recited as a step that comprises another step.

Newly added claim 18 corresponds to claim 10. Newly added claims 19 and 20 are supported in paragraph [0024], which discloses that the event-relevant information is also "designated for a specific receiver" when it is written to the database.

Finally, several items formerly included in these independent claims, but are not in the independent claim in the issued German patent, have been moved to dependent claims:

Dependent claims 12 and 15 recite "wherein the event-relevant information written to the data base includes at least one of event messages, fault messages, information about machine status and process information, or a combination thereof" which was deleted from claims 1 and 11, except for the addition of the recitation "at least one" that appeared to be implied therein.

Dependent claims 13 and 16 recite "the step of performing at least one of failure analysis and fault repair of the machine" using event-relevant information accessed using the same cryptographic or authentication protection, respectively, which was deleted from claims 1 and 11. However, these claims further recite using the same protocol, which is supported in paragraphs [0015] and [0017] and distinguishes them from claims 10 and 19.

Dependent claims 14 and 17 now recite the narrower restriction to "only" transmitting a receiver-specific message "indicating that the specified alarm event has occurred" that was deleted from the independent claims. This one way to assure

that the receiver-specific message "does not contain sensitive event-relevant information" as is stated in paragraph [0024].

CLAIM REJECTIONS UNDER 35 U.S.C. §103

The rejection of Claims 1-7 and 11, as amended, under 35 U.S.C. 103(a) as being unpatentable over Malizia and Araujo et al. in view of Woest and Helfrich is hereby respectfully traversed. Nothing in the cited patents discloses or suggests writing event-relevant information about an alarm event occurring in a machine from an industrial controller controlling the machine to a database that is specifically for a specified receiver and accessing that information via a protected protocol in response to a receiver-specific message, as recited in these claims.

The rejection of Claim 8, as amended, under 35 U.S.C. 103(a) as being unpatentable over Malizia, Araujo et al., Woest and Helfrich in view of Edwards et al. is hereby respectfully traversed for the reasons given above with reference to the rejection of claims 1-7 and 11.

The rejection of Claim 9, as amended, under 35 U.S.C. 103(a) as being unpatentable over Malizia, Araujo et al., Woest and Helfrich in view of Edwards et al. and Crater is hereby respectfully traversed for the reasons given above with reference to the rejection of claim 8.

The rejection of Claim 10, as amended, under 35 U.S.C. 103(a) as being unpatentable over Malizia, Araujo et al., Woest and Helfrich in view of Lo is hereby respectfully traversed for the reasons given above with reference to the rejection of claims 1-7 and 11.

For the reasons set forth above, it is applicant's contention that none of the applied references, taken alone or in any combination, teaches or suggests the features of the present invention, as recited in independent claims 1 and 11.

As for the rejection of the dependent claims, these claims depend on claims 1 and 11, respectively, share their presumably allowable features, and therefore it is respectfully submitted that these claims should also be allowed.

Withdrawal of the rejection under 35 U.S.C. §103(a) and allowance of claims 1-20 are thus respectfully requested.

PRIORITY DOCUMENT

On page 1 of the Office Action, the Examiner checked the box “[Some]” to acknowledge the receipt of a certified copy of priority document no. 102 41 953.1, when in fact the box “[All]” should have been checked, because there is only one certified copy to be filed which had been filed by applicant on September 10, 2003. The receipt of the certified copy has been acknowledged by the Examiner in the Office Action of April 9, 2007 and the certified copy is in the application file. The Examiner is respectfully requested to check the appropriate box in the next Office Action.

CONCLUSION

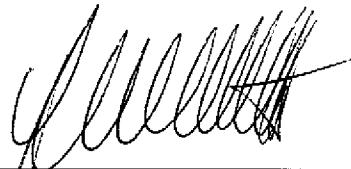
Applicant believes that when reconsidering the claims in the light of the above comments, the Examiner will agree that the invention is in no way properly met or anticipated or even suggested by any of the references however they are considered.

In view of the above presented remarks and amendments, it is respectfully submitted that all claims on file should be considered patentably differentiated over the art and should be allowed.

Reconsideration and allowance of the present application are respectfully requested.

Should the Examiner consider necessary or desirable any formal changes anywhere in the specification, claims and/or drawing, then it is respectfully requested that such changes be made by Examiner's Amendment, if the Examiner feels this would facilitate passage of the case to issuance. If the Examiner feels that it might be helpful in advancing this case by calling the undersigned, applicant would greatly appreciate such a telephone interview.

Respectfully submitted,

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